

CLAIMS

Please amend claim 1 as follows.

The following is a complete list of all claims and status thereof.

1. (Currently Amended) A system for improving signal-to-noise ratio for an eye gaze tracker, comprising:
 - an illuminator for illuminating a user's eye with light radiation;
 - a camera for detecting an illuminator signal from said illuminator light radiation reflected from the user's eye and also detecting ambient light noise, said camera outputting an output signal;
 - means for synchronizing said illuminator to turn on with a first interval of said camera and turn off with a second interval of said camera;
 - means for digitizing said output signal and capturing a first image from said first interval having an illuminator signal portion and an ambient light noise portion and capturing a second image from said second interval having said ambient light noise portion; and
 - means for subtracting said second ~~first~~ image from said first ~~second~~ image to produce an output image comprised of said illuminator signal portion, said output image being ~~substantially~~ devoid of said ambient light noise portion.
2. (Original) A system for improving signal-to-noise ratio for an eye gaze tracker as recited in claim 1 wherein said first and second intervals comprise camera frames.

3. (Original) A system for improving signal-to-noise ratio for an eye gaze tracker as recited in claim 2 wherein said means for subtracting subtracts according to the expression

$o_n = |f_n - f_{n-1}|$, where n is an integer ≥ 0 , o is said output image, and f are said camera frames.

4. (Withdrawn) A system for improving signal-to-noise ratio for an eye gaze tracker as recited in claim 2 wherein said means for subtracting subtracts according to the expression

$o_n = |f_n - (f_{n-1} + f_{n+1})/2|$, where n is an integer ≥ 0 , o is said output image, and f are said camera frames.

5. (Withdrawn) A system for improving signal-to-noise ratio for an eye gaze tracker as recited in claim 1 wherein said first and second intervals comprise a first raster field and a second raster field, respectively, forming a horizontal stripe pattern.

6. (Withdrawn) A system for improving signal-to-noise ratio for an eye gaze tracker as recited in claim 1 wherein said first and second intervals comprise odd and even pixels forming one of a vertical stripe pattern and a checkerboard pattern.

7. (Original) A method for improving the performance of an eye gaze tracker system, comprising the steps of:

shining a modulated light on a user's eye during a first interval;

detecting said modulated light reflected from the user's eye and simultaneously detecting noise light from an ambient source during said first interval and producing a first data comprising a reflection portion and a noise portion;

turning off said modulated light during a second interval;

detecting said noise light from said ambient source during said second interval and producing a second data comprising said noise portion; and

subtracting said second data from said first data to produce an output data comprising said reflection portion.

8. (Original) A method for improving the performance of an eye gaze tracker system as recited in claim 7 wherein said first interval and said second interval are camera frames.

9. (Original) A method for improving the performance of an eye gaze tracker system as recited in claim 8 wherein said subtracting step subtracts according to the expression $o_n = |f_n - f_{n-1}|$, where n is an integer ≥ 0 , o is said output data image, and f are said camera frames.

10. (Withdrawn) A method for improving the performance of an eye gaze tracker system as recited in claim 8 wherein said subtracting step subtracts according to the expression $o_n = |f_n - (f_{n-1} + f_{n+1})/2|$, where n is an integer ≥ 0 , o is said output data, and f are said camera frames.

11. (Withdrawn) A method for improving the performance of an eye gaze tracker system as recited in claim 7 wherein said first interval and said second interval are odd and even pixels, respectively.

12. (Withdrawn) A method for improving the performance of an eye gaze tracker system as recited in claim 7 wherein said first interval and said second interval are first and second raster fields, respectively, forming a horizontal stripe pattern.

13. (Withdrawn) A method for improving the performance of an eye gaze tracker system as recited in claim 7 wherein said first interval and said second interval are alternating pixels forming one of a vertical stripe pattern and a checkerboard pattern.

14. (Original) A computer readable medium comprising software instructions for controlling an eye gaze tracker system to execute the steps of:

turning on an illuminator to shine at a user's eye during a first interval;

detecting said modulated light reflected from the user's eye and simultaneously detecting noise light from an ambient source during said first interval and producing a first data comprising a reflection portion and a noise portion;

turning off said modulated light during a second interval;

detecting said noise light from said ambient source during said second interval and producing a second data comprising only said noise portion; and

subtracting said second data from said first data to produce an output data comprising said reflection portion.

15. (Original) A computer readable medium comprising software as recited in claim 14 wherein said first interval and said second interval are camera frames.

16. (Original) A computer readable medium comprising software as recited in claim 15 wherein said subtracting step subtracts according to the expression $o_n = |f_n - f_{n-1}|$, where n is an integer ≥ 0 , o is said output data, and f are said camera frames.

17. (Withdrawn) A computer readable medium comprising software as recited in claim 15 wherein said subtracting step subtracts according to the expression $o_n = |f_n - (f_{n-1} + f_{n+1})/2|$, where n is an integer ≥ 0 , o is said output data, and f are said camera frames.

18. (Withdrawn) A computer readable medium comprising software as recited in claim 14 wherein said first interval and said second interval are odd and even pixels, respectively.

19. (Withdrawn) A computer readable medium comprising software as recited in claim 14 wherein said first interval and said second interval are first and second raster fields, respectively, forming a horizontal stripe pattern.

20. (Withdrawn) A computer readable medium comprising software as recited in claim 14 wherein said first interval and said second interval are alternating pixels forming one of a vertical stripe pattern and a checkerboard pattern.

21. (Previously Presented) A system for improving signal-to-noise ratio for an eye gaze tracker as recited in claim 1, wherein said means for subtracting said first image from said second image subtracts said first image from said second image pixel-by-pixel.